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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/688,187  | 10/17/2003  | Wenbing Yun          | 0002.0005US1        | 6651             |
| 29127   | 7590        | 01/31/2006           | EXAMINER            |                  |
| HOUSTON ELISEEVA<br>4 MILITIA DRIVE, SUITE 4<br>LEXINGTON, MA 02421 |             |                      | LAVARIAS, ARNEL C   |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2872                |                  |
| DATE MAILED: 01/31/2006   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

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|                              |                                      |                                   |  |
|------------------------------|--------------------------------------|-----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/688,187 | <b>Applicant(s)</b><br>YUN ET AL. |  |
|                              | <b>Examiner</b><br>Arnel C. Lavarias | <b>Art Unit</b><br>2872           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/28/05, 9/19/05, 6/9/05, 8/20/04, 3/8/04.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 2-20 and 25-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 21-24 and 31-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/17/03, 3/8/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. The amendments to the specification in the preliminary amendment filed 8/20/04 is acknowledged and accepted.
2. The amendments to Claim 23 in the submission dated 6/9/05 are acknowledged and accepted.
3. The addition of Claims 31-34 in the submission dated 6/9/05 is acknowledged and accepted.

### *Election/Restrictions*

4. Applicant's election of Invention IB (Claims 21-24) in the reply filed on 12/28/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
5. Claims 2-20, 25-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/28/05.

### *Priority*

6. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(e).

***Drawings***

7. The originally filed drawings were received on 10/17/03. The replacement formal drawings were received on 3/8/04. These drawings are acceptable.

***Specification***

8. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. *The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.* The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. *It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.*

9. The abstract of the disclosure is objected to because of the following informalities:

Abstract (Paragraph 76), line 2- delete 'are disclosed'

Abstract (Paragraph 76), line 3- 'comprising' should read 'including'

Abstract (Paragraph 76), line 7- 'including.' should read 'including'.

Correction is required. See MPEP § 608.01(b).

10. The disclosure is objected to because of the following informalities:

Paragraph 07, line 2- 'including.' should read 'including'

Paragraph 14, line 1- 'an' should read 'a'

Paragraph 22, line 1- 'ot' should read 'to'

Paragraph 26, line 1- 'AFO. It' should read 'AFO, it'

Paragraph 31, line 4- 'remove there' should read 'removes the'

Paragraph 32, line 1- 'shows' should read 'shown'

Paragraph 37, line 3- insert 'to' after 'corresponds'

Paragraph 42, line 1; Paragraph 46, line 1; Paragraph 50, line 5- 'refractive element 5' should read 'diffractive element 5 is'

Paragraph 45, line 11- 'desire' should read 'desired'

Paragraph 56, line 6- delete 'um'.

Appropriate correction is required.

### ***Claim Objections***

11. Claims 1, 21-24, 31-34 are objected to because of the following informalities:

Claim 1 recites the limitation "the second optical element" in line 5. There is insufficient antecedent basis for this limitation in the claim. Claims 31-34 are dependent on Claim 1, and hence inherit the deficiencies of Claim 1.

Claim 21 recites the limitation "the second optical element" in line 6. There is insufficient antecedent basis for this limitation in the claim. Claims 22-24 are dependent on Claim 21, and hence inherit the deficiencies of Claim 21.

Appropriate correction is required.

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-

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type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1, 21, 31 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1, 17, 45-47 of copending Application No. 10/331108 (U.S. Patent Application Publication US2004/0125442 A1) in view of Piestrup et al. (U.S. Patent No. 6269145).

Copending Application No. 10/331108 (U.S. Patent Application Publication US2004/0125442 A1) recites a method for fabricating a compound optic for short wavelength radiation (See objective and phase plate in Claims 1, 17, 45), the method comprising forming a first optical element of the compound optic (See line 4 of Claim 45; Claims 46-47); forming a fiducial mark on the substrate (See line 3 in Claim 45); and forming a second optical element of the compound optic by reference to the fiducial mark (See lines 5-7 in Claim 45). Copending Application No. 10/331108 (U.S. Patent Application Publication US2004/0125442 A1) does not explicitly recite forming a surface profile of the first optical element, such as by removing material. However, the formation of zone plates and Fresnel lenses by removal of substrate material to form the

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surface profile of such optical elements is well known and standard practice in the art. For example, Piestrup et al. teaches a conventional compound refractive lens for x-ray radiation (See for example Figures 3A-B; Figures 10-11), wherein the surface profile of the compound refractive lens, e.g. Fresnel compound refractive lenses, may be fabricated by lathe machining, diamond turning, or electron beam or laser writing in combination with lithography (See col. 21, line 34-col. 23, line 48). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the method of copending Application No. 10/331108 (U.S. Patent Application Publication US2004/0125442 A1) further form a surface profile of the first optical element, such as by removing material, as taught by Piestrup et al., to provide reliable and accurate fabrication of the minute surface structure (in the order of 2-3 microns) of the first optical element.

This is a provisional obviousness-type double patenting rejection.

### ***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1, 21-24, 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Piestrup et al.

Piestrup et al. discloses a method for fabricating a compound optic for short wavelength radiation (See Abstract; Figures 3A-B; 6-15, the method comprising forming a surface profile by removing material of a substrate to form a surface profile of a first optical element of the compound optic (See Figures 7-9; 42 in Figures 11-12; col. 21, line 34-col. 23, line 48); forming a fiducial mark on the substrate (See 38 in Figure 12A-B); and forming a second optical element of the compound optic by reference to the fiducial mark (See Figures 13-14; col. 26, line 61-col. 27, line 61, wherein the second optical element, which is similar to that of the first optical element, is formed by similar methods for forming the first optical element and is aligned to the first optical element using alignment holes 38 and alignment posts 40). Piestrup et al. additionally discloses the first, second, etc. optical elements being conventional lenses or zone plate lenses (See Figures 3-15; col. 21, line 34-col. 23, line 48); forming an optical port on a backside of the substrate (See for example 20 in Figure 9A-B); and forming the second optical element in the optical port (See 28 in Figure 9A, which discloses the formation of a conventional lens through the optical port).

### ***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnel C. Lavarias  
Patent Examiner  
Group Art Unit 2872  
1/30/06